

**M. License Condition Changes**

18 Pages Attached

Replace the current Callaway Plant Unit 1 fire protection operating license (OL) condition 2.C(5) with the standard operating license condition in Regulatory Position C.3.1 of Regulatory Guide 1.205, "Risk-Informed, Performance-Based Fire Protection for Light-Water Nuclear Power Plants," Revision 1, as modified by FAQ 06-0008 Revision 9 (ML073380976), as described below.

It is Ameren Missouri's understanding that implicit in the superseding of these license conditions, prior fire protection SERs and commitments have been superseded in their entirety by the revised license condition. However, Revision 056 to the Callaway Plant Unit 1 Operating License dated June 26, 2007, added OL condition C.15 "Mitigation Strategy License Condition" in response to Section B.5.b of the February 25, 2002, "Interim Compensatory Measures Order" (EA-02-026) (TAC No.4518). This order requires that strategies for addressing large fires and explosions be maintained for key areas. This OL condition will remain in effect.

No other license conditions need to be superseded or revised. Ameren Missouri implemented the following process for determining that OL condition 2.C(5) is the only license condition required to be superseded to implement the new fire protection program which meets the requirements of 10 CFR 50.48(a) and 50.48(c):

A review of the Callaway Plant OL NPF 30, Revision 056 (which incorporated OL Condition C.15) and the current Revision 068 was performed by the Callaway Plant licensing staff and the NFPA 805 Transition Team. The review was performed by reviewing the OL and performing electronic searches using the Callaway Plant Licensing Research System (LRS). The Callaway Plant LRS contains Callaway Plant licensing documents, correspondence, and regulatory and guidance materials, including those documents pertaining to the operating license, the Technical Specifications, the fire protection program, the FSAR and subsequent revisions, correspondence sent to the NRC, and correspondence received from the NRC. The correspondence sent to the NRC includes any outstanding license amendment request submittals.

**Supersede the following license condition 2.C(5):**

- (5) *Fire Protection (Section 9.5.1.7 SER and Section 9.5.1.8, SSER #3)*
- (a) *Deleted per Amendment No. 169.*
  - (b) *Deleted per Amendment No. 169.*
  - (c) *The licensee shall implement and maintain in effect all provisions of the approved fire protection program as described in the SNUPPS Final Safety Analysis Report for the facility through Revision 15, the Callaway site addendum through Revision 8, and as approved in the SER through Supplement 4, subject to provision d below.*
  - (d) *The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.*
  - (e) *Deleted (see Amendment No. 30, January 13, 1988).*

**New License Condition:**

Union Electric shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the license amendment request dated 8/29/2011 (and supplements dated 11/9/2011, 4/17/2012, 7/12/2012, 2/19/2013, 8/5/2013 and 9/24/2013) and as approved in the safety evaluation report dated MM/DD/YYYY (and supplements dated MM/DD/YYYY). Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

**Risk-Informed Changes that May Be Made Without Prior NRC Approval**

A risk assessment of the change must demonstrate that the acceptance criteria below are met. The risk assessment approach, methods, and data shall be acceptable to the NRC and shall be appropriate for the nature and scope of the change being evaluated; be based on the as-built, as-operated, and maintained plant; and reflect the operating experience at the plant. Acceptable methods to assess the risk of the change may include methods that have been used in the peer-reviewed fire PRA model, methods that have been approved by NRC through a plant-specific license amendment or NRC approval of generic methods specifically for use in NFPA 805 risk assessments, or methods that have been demonstrated to bound the risk impact.

- (a) Prior NRC review and approval is not required for changes that clearly result in a decrease in risk. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.
- (b) Prior NRC review and approval is not required for individual changes that result in a risk increase less than  $1 \times 10^{-7}$ /year (yr) for CDF and less than  $1 \times 10^{-8}$ /yr for LERF. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

**Other Changes that May Be Made Without Prior NRC Approval**

(1) Changes to NFPA 805, Chapter 3, Fundamental Fire Protection Program and Design Elements

Prior NRC review and approval are not required for changes to the NFPA 805, Chapter 3, fundamental fire protection program elements and design requirements for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is functionally equivalent or adequate for the hazard. The licensee may use an engineering evaluation to demonstrate that a change to an NFPA 805, Chapter 3, element is functionally equivalent to the corresponding technical requirement. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure or physical arrangement, using a relevant technical requirement or standard.

The licensee may use an engineering evaluation to demonstrate that changes to certain NFPA 805, Chapter 3, elements are acceptable because the alternative is "adequate for the hazard." Prior NRC review and approval would not be required for alternatives to four specific sections of NFPA 805, Chapter 3, for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is adequate for the hazard. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure or physical arrangement, using a relevant technical requirement or standard. The four specific sections of NFPA 805, Chapter 3, are as follows:

- "Fire Alarm and Detection Systems" (Section 3.8);
- "Automatic and Manual Water-Based Fire Suppression Systems" (Section 3.9);
- "Gaseous Fire Suppression Systems" (Section 3.10); and
- "Passive Fire Protection Features" (Section 3.11).

This License Condition does not apply to any demonstration of equivalency under Section 1.7 of NFPA 805.

(2) Fire Protection Program Changes that Have No More than Minimal Risk Impact

Prior NRC review and approval are not required for changes to the licensee's fire protection program that have been demonstrated to have no more than a minimal risk impact. The licensee may use its screening process as approved in the NRC safety evaluation report dated MM/DD/YYYY to determine that certain fire protection program changes meet the minimal criterion. The licensee shall ensure that fire protection defense-in-depth and safety margins are maintained when changes are made to the fire protection program.

**Transition License Conditions**

- (1) Before achieving full compliance with 10 CFR 50.48(c), as specified by (2) below, risk-informed changes to the licensee's fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in (2) above.
- (2) The licensee shall implement the items listed in Enclosure 2, Attachment S, Table S-3, "Implementation Items," of Ameren Missouri letter ULNRC-06031, dated September 24, 2013, by June 30, 2014.

**Operating License Markup**

4 Pages Attached

**LDCN 11-0012**

**OPERATING LICENSE MARKUP**

**License Condition 2.C.5**

LDCN 11-0012

Operating License  
Revision 068

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- (4) Surveillance of Hafnium Control Rods (Section 4.2.3.1(10), SER and SSER #2)

Deleted per Amendment No. 169

- (5) Fire Protection (Section 9.5.1.7 SER and Section 9.5.1.8, SSER #3)

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- (a) Deleted per Amendment No. 169.
- (b) Deleted per Amendment No. 169.
- (c) The licensee shall implement and maintain in effect all provisions of the approved fire protection program as described in the SNUPPS Final Safety Analysis Report for the facility through Revision 15, the Callaway site addendum through Revision 8, and as approved in the SER through Supplement 4, subject to provision d below.
- (d) The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.
- (e) Deleted (see Amendment No. 30, January 13, 1988)

- (6) Qualification of Personnel (Section 13.1.2, SSER #3, Section 18, SSER #1)

Deleted per Amendment No. 169.

- (7) NUREG-0737 Conditions (Section 22, SER)

Deleted per Amendment No. 169.

- (8) Post-Fuel-Loading Initial Test Program (Section 14, SER)

Deleted per Amendment No. 169.

- (9) Inservice Inspection Program (Sections 5.2.4 and 6.6, SER)

Deleted per Amendment No. 169.

- (10) Emergency Planning

Deleted per Amendment No. 169.

Amendment 169

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**(5) Fire Protection**

Union Electric shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the license amendment request dated 8/29/2011 (and supplements dated 11/9/2011, 4/17/2012, 7/12/2012, 2/19/2013, 8/5/2013 and 9/24/2013) and as approved in the safety evaluation report dated MM/DD/YYYY (and supplements dated MM/DD/YYYY). Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

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- (a) Prior NRC review and approval is not required for changes that clearly result in a decrease in risk. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.
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fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement, using a relevant technical requirement or standard.

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Transition License Conditions

- (1) Before achieving full compliance with 10 CFR 50.48(c), as specified by (2) below, risk-informed changes to the licensee’s fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in (2) above.
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**Operating License Retype**

9 Pages Attached

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(4) Surveillance of Hafnium Control Rods (Section 4.2.3.1(10), SER and SSER #2)

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Amendment ###

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(2) Fire Protection Program Changes that Have No More than Minimal Risk Impact Prior NRC review and approval are not required for changes to the licensee's fire protection program that have been demonstrated to have no more than a minimal risk impact. The licensee may use its screening process as approved in the NRC safety evaluation report dated MM/DD/YYYY to determine that certain fire protection program changes meet the minimal criterion. The licensee shall ensure that fire protection defense-in-depth and safety margins are maintained when changes are made to the fire protection program.

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  - (2) The licensee shall implement the items listed in Enclosure 1, Attachment S, Table S-3, "Implementation Items," of Ameren Missouri letter ULNRC-06031, dated 9/24/2013, by June 30, 2014.
- (6) Qualification of Personnel (Section 13.1.2, SSER #3, Section 18, SSER #1)  
Deleted per Amendment No. 169.
  - (7) NUREG-0737 Conditions (Section 22, SER)  
Deleted per Amendment No. 169.
  - (8) Post-Fuel-Loading Initial Test Program (Section 14, SER)  
Deleted per Amendment No. 169.
  - (9) Inservice Inspection Program (Sections 5.2.4 and 6.6, SER)  
Deleted per Amendment No. 169.
  - (10) Emergency Planning  
Deleted per Amendment No. 169.

Amendment ###

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(11) Steam Generator Tube Rupture (Section 15.4.4, SSER #3)

Deleted per Amendment No. 169.

(12) Low Temperature Overpressure Protection (Section 15, SSER #3)

Deleted per Amendment No. 169.

(13) LOCA Reanalysis (Section 15, SSER #3)

Deleted per Amendment No. 169.

(14) Generic Letter 83-28

Deleted per Amendment No. 169.

(15) Mitigation Strategy License Condition

Develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

(a) Fire fighting response strategy with the following elements:

1. Pre-defined coordinated fire response strategy and guidance
2. Assessment of mutual aid fire fighting assets
3. Designated staging areas for equipment and materials
4. Command and control
5. Training of response personnel

(b) Operations to mitigate fuel damage considering the following:

1. Protection and use of personnel assets
2. Communications
3. Minimizing fire spread
4. Procedures for implementing integrated fire response strategy
5. Identification of readily-available, pre-staged equipment
6. Training on integrated fire response strategy
7. Spent fuel pool mitigation measures

(c) Actions to minimize release to include consideration of:

1. Water spray scrubbing
2. Dose to onsite responders

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Amendment ###

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(16) Additional Conditions

The Additional Conditions contained in Appendix C, as revised through Amendment No. 190, are hereby incorporated into this license. UE shall operate the facility in accordance with the Additional Conditions.

D. An Exemption from certain requirements of Appendix J to 10 CFR Part 50, are described in the October 9, 1984 staff letter. This exemption is authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest. Therefore, this exemption is hereby granted pursuant to 10 CFR 50.12. With the granting of this exemption the facility will operate, to the extent authorized herein, in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission.

E. UE shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contain Safeguards Information protected under 10 CFR 10 CFR 73.21, are entitled: "Callaway Security Plan, Training and Qualification Plan, and Safeguards Contingency Plan, Revision 0" submitted by letter dated October 20, 2004, as supplemented by the letter May 11, 2006.

UE shall fully implement and maintain in effect all provisions of the Commission - approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Callaway Plant Unit 1 CSP was approved by License Amendment No. 203. |

F. Deleted per Amendment No. 169.

G. UE shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.

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Amendment ###

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- H. This license is effective as of the date of issuance and shall expire at Midnight on October 18, 2024.

FOR THE NUCLEAR REGULATORY  
COMMISSION ORIGINAL SIGNED BY H. R.

DENTON

Harold R. Denton, Director  
Office of Nuclear Reactor Regulation

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Amendment ###

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Attachments/Appendices:

1. Attachment 1 (Deleted per Amendment No. 169)
2. Attachment 2 (Deleted per Amendment No. 169)
3. Appendix A - Technical Specifications (NUREG-1058, Revision 1)
4. Appendix B - Environmental Protection Plan
5. Appendix C – Additional Conditions

Date of Issuance: October 18, 1984

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Amendment ###

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ATTACHMENT 1

Deleted per Amendment No. 169.

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ATTACHMENT 2

Deleted per Amendment No. 169.

**Tables S-1 and S-2, Plant Modifications Completed and Committed, respectively. Each of these tables provided below includes a description of the modifications along with the following information:**

- A problem statement,
- Risk ranking of the modification based on estimated impact on the Fire PRA results (see legend),
- An indication if the modification is currently included in the FPRA,
- Compensatory Measure in place, and
- A risk-informed characterization of the modification and compensatory measure.
- The following legend should be used when reviewing the tables:
  - **High** = Modification would have an appreciable impact on reducing overall fire CDF.
  - **Medium** = Modification would have a measurable impact on reducing overall fire CDF.
  - **Low** = Modification would have either an insignificant or no impact on reducing overall fire CDF.

Table S-1 – Plant Modifications Completed

Item	Rank	Problem Statement	Proposed Modification	In FPRA	Comp Measure	Risk Informed Characterization
05-3029*	-	Install lower amperage fuses to prevent damage to 14 AWG cables and prevent secondary fires from occurring in the MCR.	Install lower amperage fuses for various 14 AWG control circuits in the MCR. The majority of the modification centers around the trip circuit fuses on NB, NB, PA, PB, and PG system breakers	N	No	<p>This modification ensures there are no secondary fires. NUREG/CR-6850 methodology does not address secondary fires, but the issue of secondary fires was raised during the pilot plant RAI process. Secondary fires are not modeled in the Callaway Fire PRA and an assessment of risk was not performed.</p> <p><u>Compensatory measure for NFPA 805:</u> In accordance with station procedures, appropriate compensatory measures will be established when the NFPA 805 fire protection program becomes effective and remain in effect until this modification is complete.</p> <p><u>Compensatory measure for Current Fire Protection Licensing Basis:</u> None; the MCR is deterministically compliant with the Current Fire Protection Licensing Basis.</p>
07-0066	M	Buried carbon steel ESW system piping needed replacement. As part of this piping modification, relocate cables currently in nonconformance with 20 foot separation criteria.	The buried carbon steel ESW piping was replaced with high density polyethylene (HDPE) piping. During the piping replacement the cabling associated with EFTE0067A and 68A was relocated to restore the required 20 foot separation criteria.	Y	No	<p>Cables affect ESW cooling from the UHS cooling towers, potentially failing both trains, but could be mitigated by a recovery action (and the recovery action is no longer needed). This is judged to have a medium impact on risk.</p> <p><u>Compensatory measure:</u> None; modification complete</p>

**Table S-1 – Plant Modifications Completed**

Item	Rank	Problem Statement	Proposed Modification	In FPRA	Comp Measure	Risk Informed Characterization
07-0151*	L	During a fire in the main control room (MCR), selected cables to B train related equipment fed from NB02 will be isolated to prevent a multi-spurious hot short from stopping or starting safety equipment. Circuits that have isolation switches but lack redundant fuses are included in this modification. This modification will eliminate credit previously taken to have operators replace potentially blown fuses prior to the NFWA 805 transition.	Install redundant fuses and isolation switches for MCR evacuation procedure OTO-ZZ-00001.	Y	Y FPIP 14050	<p>PRA assumes that after a fire in the main control room, the B train components are operable from the auxiliary shutdown panel without requiring replacement of fuses.</p> <p><u>Compensatory measure for NFWA 805:</u> In accordance with station procedures, appropriate compensatory measures will be established when the NFWA 805 fire protection program becomes effective and remain in effect until this modification is complete.</p> <p><u>Compensatory measure for Current Fire Protection Licensing Basis:</u> None; the MCR is deterministically compliant with the Current Fire Protection Licensing Basis.</p>

Table S-1 – Plant Modifications Completed

Item	Rank	Problem Statement	Proposed Modification	In FPRA	Comp Measure	Risk Informed Characterization
09-0025*	M	A fire in fire areas A-1, A-2, A-4, A-8, A-16 (analysis area A-16S), A-27, C-18, C-21, C-22, C-23, C-24, C-30, C-33, and RB-1 (analysis areas RB1, RB2, RB3, and RB4) could cause EJHV8811A and/or B to spuriously open due to direct valve control cable damage and begin draining the RWST to the containment emergency sumps.	To protect against multiple spurious scenarios, the solution is to run a single wire in a protected metal jacket such that spurious valve opening due to a hot short affecting the valve control circuit is eliminated for these fire areas.	Y	Y FPIP 14050	<p>This is judged to be a moderate risk improvement. In A-1, A-2, A-4, A-8, A-16 (analysis area A-16S), A-27, C-18, C-21, C-22, C-23, C-24, C-30, C-33, and RB-1 (analysis areas RB1, RB2, RB3, and RB4), EJHV8811A/B are assumed to not have potential for spurious opening due to valve control cable damage because of the modification. EJHV8811A/B can still spuriously open if the MCC which powers the valve is involved in the fire, or in response to a valid or spurious SI signal concurrent with a spurious RWST Low level signal.</p> <p><u>Compensatory measure for NFPA 805:</u> In accordance with station procedures, appropriate compensatory measures will be established when the NFPA 805 fire protection program becomes effective and remain in effect until this modification is complete.</p> <p><u>Compensatory measure for Current Fire Protection Licensing Basis :</u> None; fire areas A-1, A-2, A-4, A-8, A-16 (analysis area A-16S), A-27, C-18, C-21, C-22, C-23, C-24, C-30, C-33, and RB-1 (analysis areas RB1, RB2, RB3, and RB4) are deterministically compliant with the Current Fire Protection Licensing Basis.</p>

Table S-1 – Plant Modifications Completed

Item	Rank	Problem Statement	Proposed Modification	In FPRA	Comp Measure	Risk Informed Characterization
10-0032	H	Risk metrics indicated that additional defense in depth was warranted for the AFW system. This modification provides margin for AFW system MSPI metrics.	Installed a non-safety related AFW pump as diverse AFW backup supply to the safety related motor driven and turbine driven pumps.	Y <sup>4</sup>	No	Fire PRA credits this modification for decay heat removal redundancy.  <u>Compensatory measure:</u> None; modification complete
10-0038	H	Improve Callaway Plant's defense in depth to mitigate the consequences from a potential Station Black Out (SBO). Provide an alternate emergency source of power that is diverse from the Emergency Diesel Generators and offsite sources.	Install four non-safety related diesel generators (8 MW) at the electric cooperative substation. Either the electric cooperative substation or the 4 non-safety diesel generators will be able to power either Safety Related bus in the event of a loss of AC power and failure of the Emergency Diesel Generators.	Y <sup>4</sup>	No	Fire PRA credits this modification for electrical power redundancy  <u>Compensatory measure:</u> None; modification installed. Additional changes forthcoming that do not affect FPRA.

Table S-1 – Plant Modifications Completed

Item	Rank	Problem Statement	Proposed Modification	In FPRA	Comp Measure	Risk Informed Characterization
201202154	L	Quick response sprinkler heads were installed in cable chases A-11, C-30 and C-31. Due to the piping configuration, the quick response sprinkler heads were installed at an angle relative to the ceiling, as opposed to being parallel to it; the latter of which is typical.	Quick response sprinkler heads in cable chases A-11, C-30 and C-31 were replaced with spray nozzles.	Y	No	The risk condition is low. While the sprinkler heads do not explicitly meet NFPA code they are installed and functional and will activate in the event of a fire and provide full coverage within the fire area.  <u>Compensatory measure:</u> None; modification is complete.

<sup>4</sup> Refer to associated implementation item in Table S-3.

\*Installation of modifications with an asterisk (\*) is field complete and the equipment has been released to Operations. The modification package is still open for updates to lower tier documentation.

Table S-2, Items provided below are those modifications that will be completed prior to the implementation of the new NFPA 805 FP program. Any identified modifications will be field completed no later than June 30, 2013. Appropriate compensatory measures for any incomplete NFPA 805 related modifications will be maintained until the modifications are complete.

**Table S-2 – Plant Modifications Committed**

<b>Item</b>	<b>Rank</b>	<b>Problem Statement</b>	<b>Proposed Modification</b>	<b>In FPRA</b>	<b>Comp Measure</b>	<b>Risk Informed Characterization</b>
None	N/A	N/A	N/A	N/A	N/A	N/A

Table S-3, Items provided below are those items (procedure changes, process updates, and training of affected plant personnel) that will be completed prior to the implementation of the new NFPA 805 FP program. This will be the later of 6 months after Refueling Outage 19 (currently scheduled for Spring of 2013) or 8 months after NRC approval.

**Table S-3 Implementation Items**

<b>Item</b>	<b>Unit</b>	<b>Description</b>	<b>LAR Section / Source</b>
07-050A-001	1	Procedures will be revised to ensure that the hydrogen supply system is inspected annually and maintained by Ameren Missouri.	4.1.2 and Attachment A
07-050A-002	1	Dry vegetation and combustible material within 15 feet of the hydrogen supply area will be removed. Additionally, procedures will be revised to ensure that the area within 15 feet of the hydrogen supply area is kept free of dry vegetation and combustible materials.	4.1.2 and Attachment A
07-600-001	1	A safety and health policy will be documented for the Callaway Plant Fire Brigade. The policy will satisfy the requirements of NFPA 600, Sections 2-1.4 and 2-2.4.	4.1.2 and Attachment A
07-600-002	1	<p>Fire brigade policy documents and procedures will be updated to include a requirement for a standard system to identify and account for each industrial fire brigade member present at the scene of the emergency, in accordance with NFPA 600, Section 2-2.1.4.</p> <p>The requirement will also meet NFPA 600, section 2-4.5, and will specify that industrial fire brigade members be issued identification for the following purposes:</p> <ul style="list-style-type: none"> <li>(1) Assistance in reaching the incident in an emergency</li> <li>(2) Identification by security personnel</li> <li>(3) Establishing authority</li> </ul>	4.1.2 and Attachment A
07-600-003	1	<p>A risk management policy will be written for emergency response. The risk management policy shall be routinely reviewed with industrial fire brigade members and shall be based on the following recognized principles:</p> <ul style="list-style-type: none"> <li>(1) Some risk to the safety of industrial fire brigade members is acceptable where saving human lives is possible.</li> <li>(2) Minimal risk to the safety of the industrial fire brigade members, and only in a calculated manner, is acceptable where saving endangered property is possible.</li> <li>(3) No risk to the safety of industrial fire brigade members is acceptable where saving lives or property is not possible.</li> </ul>	4.1.2 and Attachment A
07-600-004	1	The Callaway Plant Fire Brigade training program will be updated to include a periodic review of NFPA 600.	4.1.2 and Attachment A
07-805-001	1	Procedure APA-ZZ-00700, "Fire Protection Program," will be revised to clearly define the fire protection interfaces with other organizations using the guidelines of Appendix A of NFPA 805.	4.1.2 and Attachment A

**Table S-3 Implementation Items**

<b>Item</b>	<b>Unit</b>	<b>Description</b>	<b>LAR Section / Source</b>
07-805-002	1	The AHJ (i.e., NRC, NEIL) will be identified in procedure APA-ZZ-00700, "Fire Protection Program," using the guidelines of Appendix A of NFPA 805.	4.1.2 and Attachment A
07-805-004	1	Procedure APA-ZZ-00741, "Control of Combustible Materials," will be revised to include a requirement for plastic sheeting used in the power block to have passed NFPA 701.	4.1.2 and Attachment A
07-805-005	1	Sections 4.1.5.c and 4.1.5.e of procedure APA-ZZ-00741, "Control of Combustible Materials," will be revised to include the removal of all waste, debris, scrap, and combustible packing materials from all areas, not only safety-related buildings and adjacent areas.	4.1.2 and Attachment A
07-805-006	1	Procedure APA-ZZ-00742, "Control of Ignition Sources," will be revised to include requirements for not allowing portable electric or fuel-fired heaters in plant areas containing equipment important to nuclear safety or where there is a potential for radiological releases resulting from a fire.	4.1.2 and Attachment A
07-805-009	1	Procedures APA-ZZ-00741, "Control of Combustible Materials," and MDP-ZZ-LM001, "Fluid Leak Management Program," will be revised to include a requirement for the prompt cleanup of combustible liquids discovered on insulation, including high flashpoint lubricating oils (instead of only performing an assessment of the potential for fire and the recording of appropriate recommendation in APA-ZZ-00741), and to keep such fluids from coming in contact with hot pipes and surfaces, including insulated pipes and surfaces.	4.1.2 and Attachment A
07-805-013	1	Procedure FPP-ZZ-00009 will be revised to include an assessment of the proper use of pre-fire plans and coordination with other groups during fire brigade drills, using the guidelines of Appendix A of NFPA 805.	4.1.2 and Attachment A
07-805-014	1	Procedure FPP-ZZ-00009, "Fire Protection Training Program," will be updated to provide requirements for drills to be conducted in various plant areas, especially in those areas identified to be essential to plant operation and to contain significant fire hazards, as required by NFPA 805.	4.1.2 and Attachment A
07-805-015	1	A requirement that specifies that fire brigade protective clothing and respiratory protective equipment shall conform to the applicable NFPA standard will be documented in APA-ZZ-00700.	4.1.2 and Attachment A

**Table S-3 Implementation Items**

<b>Item</b>	<b>Unit</b>	<b>Description</b>	<b>LAR Section / Source</b>
07-805-017	1	Procedure APA-ZZ-00741, "Control of Combustible Materials," will be revised to include requirements for maintaining adequate clearance, free of combustible material, around energized electrical equipment.	4.1.2 and Attachment A
07-805-047	1	A statement will be added to procedure APA-ZZ-00700 to require that controlled copies of the pre-fire plans be maintained in the Control Room and made available to the fire brigade.	4.1.2 and Attachment A
11-080-007	1	The scope of Procedure SDP-KC-00002, "Fire Door Position Verification," will be revised to include all doors credited to meet the requirements of NFPA 805.	4.1.2 and Attachment A
11-080-008	1	The scope of Procedure OSP-KC-00015, "Fire Door Inspections," will be revised to include all doors credited to meet the requirements of NFPA 805.	4.1.2 and Attachment A
11-805-048	1	Procedures APA-ZZ-00700 and APA-ZZ-00703 will be revised to include inspection, testing, and maintenance requirements for all fire protection systems and features credited by the fire protection program.	4.1.2 and Attachment A
11-805-049	1	Section 4.1.5.b of APA-ZZ-00741 will be revised to address that cribbing timbers 6 in. by 6 in. or larger are not required to be fire-retardant treated.	4.1.2 and Attachment A
11-805-050	1	Drawing E-2R8900 and procedure EDP-ZZ-04044 will be revised to require that, where wiring must be installed above a suspended ceiling, it shall comply with NFPA 805 Section 3.3.5.1.	4.1.2 and Attachment A
11-805-051	1	Section 4.1.3(c) of procedure APA-ZZ-00743, "Fire Team Organization and Duties," will be revised to include the requirement that industrial fire brigade members shall have no other assigned normal plant duties that would prevent immediate response to a fire or other emergency as required.	4.1.2 and Attachment A
11-805-052	1	Procedure APA-ZZ-00700 will be revised to identify that plant personnel who respond with the industrial fire brigade are trained as to their responsibilities, potential hazards to be encountered, and interfacing with the industrial fire brigade.	4.1.2 and Attachment A
11-805-053	1	OTO-ZZ-00001 and OTO-KC-00001 will be revised to incorporate credited Recovery Actions consistent with Attachment C (Fire Area Transition).	4.2.1.3 and Attachment G

**Table S-3 Implementation Items**

<b>Item</b>	<b>Unit</b>	<b>Description</b>	<b>LAR Section / Source</b>
11-805-055	1	Non-Power Operations risk management strategies from the NFPA 805 NSCA (Callaway Plant Calculation KC-26, "Nuclear Safety Capability Assessment") and the FSAs for fire areas with identified KSF pinch points will be incorporated into the plant fire response procedure(s), plant outage management procedures, and plant operating procedure(s).	4.2.1 and Attachment D
11-805-056	1	Confirmation that plant modification MP 07-0151 has adequately modified the control circuitry for Emergency Diesel Generator NE02, such that local isolation/transfer/control capability for the Main Control Room fire evacuation scenario is maintained without having to replace fuses, cut wires, or perform other repair activities with consideration given to fire induced multiple simultaneous hot shorts, open circuits, and shorts to ground per the criteria of NEI 00-01, will be made. Confirmation that the modification is correctly implemented into procedure OTO-ZZ-00001 will be made.	4.2.4 and Attachment C
11-805-058	1	APA-ZZ-00700, "Fire Protection Program," will be revised to add NPO overview, definitions; road map; and risk reduction requirements for all NPO, then HRE.	4.3.2 and Attachment D
11-805-059	1	APA-ZZ-00741, "Control of Combustible Materials," will be revised to add a section which addresses outage roving fire watches with specific NPO scope.	4.3.2 and Attachment D
11-805-061	1	APA-ZZ-00703, "Fire Protection Operability Criteria and Surveillance Requirements," contains the compensatory actions to be implemented should a fire protection system required to be operable during HRE periods be found to be impaired. In these cases continuous fire watches will be implemented in the affected systems areas.	4.3.2 and Attachment D
11-805-062	1	EDP-ZZ-04044, "Fire Protection Reviews," will be revised to add guidance to ensure that changes to the fire protection program are reviewed for impact to the NPO requirements and risk reduction actions.	4.3.2 and Attachment D
11-805-063	1	APA-ZZ-00315, "Configuration Risk Management," will be revised to reference NFPA 805 and include some discussion of risk due to fire / NFPA 805 and NPO; and to add reference to APA-ZZ-00700.	4.3.2 and Attachment D
11-805-064	1	Procedure OTN-BB-00002, "Reactor Coolant System Draining," will be revised to add the HRE risk reduction actions as a prerequisite to procedure performance, to add a checklist for risk reduction actions, and to add a restoration checklist for risk reduction actions.	4.3.2 and Attachment D

**Table S-3 Implementation Items**

<b>Item</b>	<b>Unit</b>	<b>Description</b>	<b>LAR Section / Source</b>
11-805-065	1	Procedure OTN-BB-00002, Addendum 7, "Raising RCS Level to 6 Inches Below the RX Vessel Flange," will be revised to add a decision point to check level / perform T-boil calculation to determine if HRE is exited and to add a restoration checklist for risk reduction actions.	4.3.2 and Attachment D
11-805-066	1	OTN-BB-00001, "Reactor Coolant System," will be revised to add an action to monitor T-Boil to determine when the HRE requirements can be exited and then to add a restoration checklist for risk reduction actions.	4.3.2 and Attachment D
11-805-067	1	OTG-ZZ-00007, "Refueling Preparation, Performance and Recovery," will be revised to add an action to monitor T-Boil to determine when the HRE requirements can be exited and then to add a restoration checklist for risk reduction actions.	4.3.2 and Attachment D
11-805-068	1	EDP-ZZ-01129, "Callaway Plant Risk Assessment," and/or ODP-ZZ-00002 Appendix 2, "Risk Management Actions for Planned Risk Significant Activities," will be revised to provide additional guidance to consider potential system unavailability as a result of a fire when developing a Key Safety Function Availability Checklist for a plant configuration change.	4.3.2 and Attachment D
11-805-069	1	During the implementation of the NFPA 805 license basis, performance-based surveillance frequencies will be established as described in Electric Power Research Institute (EPRI) Technical Report TR-1006756, "Fire Protection Surveillance Optimization and Maintenance Guide for Fire Protection Systems and Features" and evaluated in Callaway Plant Calculation KC-162, "Performance Based Fire Protection Surveillance Frequency Program."	4.1.2 and Attachment A
11-805-070	1	Documentation associated with the transition to NFPA 805 is being tracked as a plant modification. Records associated with the transition are included as part of the modification package.	4.7
11-805-071	1	Drawings associated with the MCR cable trench will be updated to reflect adequate separation between the MCR and the lower cable spreading room.	4.2.4
11-805-072	1	A fire PRA qualification standard will be developed to ensure individuals are appropriately qualified per the requirements of NFPA 805 Section 2.7.3.4 to perform assigned work.	4.7.3 and Attachment V
11-805-073	1	The audit scope requirements contained in OQAM Section 18.8.e will be relocated to FSAR SP Section 9.5.1 and revised to add the Monitoring Program. Additionally the OQAM Section 18 will be revised to change the FP QA Audit frequency from 2 years to 3 years.	4.6.2

**Table S-3 Implementation Items**

<b>Item</b>	<b>Unit</b>	<b>Description</b>	<b>LAR Section / Source</b>
11-805-074	1	Procedure ODP-ZZ-00002, "Equipment Status Control," Attachment 3, "Operability Evaluations," will be revised to ensure the assumed nitrogen inventory as described in Section 4.2.1.2 Safe and Stable Conditions for the Plant, is maintained in the ASD N2 accumulator tanks.	4.2.1.2
11-805-075	1	In accordance with ODP-ZZ-0016E, "Operations Technicians Watchstation Practices and Rounds," a form will be initiated to change the data points for Operations AutoTour to ensure the assumed nitrogen inventory as described in Section 4.2.1.2 Safe and Stable Conditions for the Plant, is maintained in the ASD N2 accumulator tanks.	4.2.1.2
11-805-076	1	The Fire Pre-Plan Manual will be revised as follows: <ul style="list-style-type: none"> <li>• The fire pre-plan attachments will be revised where the radiation release criteria are applicable for gaseous and liquid effluent as described in Table E-1/E-2 to include effluent controls and monitoring.</li> <li>• New Pre-Fire Plans will be added for C-36 and C-37.</li> <li>• Two new Attachments will be added, for Temporary Structures Inside the PA and for Temporary Structures Outside the PA, and existing Fire Attack Guidelines will be combined into each attachment.</li> </ul>	4.1.2 and Attachment A 4.4.2 and Attachment E
11-805-077	1	FPP-ZZ-00009, "Fire Protection Training Program," will be revised to include the containment and monitoring of fire suppression agents and products of combustion in potentially contaminated areas.	4.4.2 and Attachment E
11-805-078	1	FPP-ZZ-00009, "Initial Training Course Agenda," will be revised to include the containment and monitoring of fire suppression agents and products of combustion in potentially contaminated areas.	4.4.2 and Attachment E
11-805-079	1	FPP-ZZ-00009, "Retraining Courses and Activities," will be revised to include the containment and monitoring of fire suppression agents and products of combustion in potentially contaminated areas.	4.4.2 and Attachment E
11-805-080	1	Section 6 of HTP-ZZ-05006, "Fire Involving Radioactive Material or Entry into the Radiological Controlled Area," will be revised to address Radiation Protection actions for monitoring and control of potentially contaminated effluents.	4.4.2 and Attachment E

**Table S-3 Implementation Items**

<b>Item</b>	<b>Unit</b>	<b>Description</b>	<b>LAR Section / Source</b>
11-805-081	1	T66.0092 / Module 2 will be revised as follows: <ul style="list-style-type: none"> <li>• Discussion of radiological considerations in ventilation decision process will be added to the Ventilation section.</li> <li>• Discussion addressing potentially contaminated materials will be added to the Salvage and Overhaul section, and radiological considerations will be added in the water removal section.</li> <li>• Discussion addressing radiological considerations for search and rescue actions on opening doors, etc. will be added to the Search and Rescue section.</li> </ul>	4.4.2 and Attachment E
11-805-082	1	The Power Plant Hazards section of T66.0092 / Module 3 will be revised to add discussion addressing radiological release considerations.	4.4.2 and Attachment E
11-805-083	1	The Fire Ground Safety section of T66.0092 / Module 4 will be revised to add discussion addressing Radiological considerations to hazards discussion.	4.4.2 and Attachment E
11-805-084	1	The initial size up guidance, ventilation, and overhaul considerations sections of T66.0092 / Module 5 will be revised to add discussion addressing radiological release considerations.	4.4.2 and Attachment E
11-805-085	1	APA-ZZ-01000, Appendix A, "Control Of Radioactive Material," will be revised to add reference to Callaway Plant Calculation HPCI 10-04, "National Fire Protection Association (NFPA) Standard 805 Airborne and Liquid Effluents Offsite Dose," and to add discussion to Section 4 to discuss considerations of fire, gaseous and liquid effluents impacts on NFPA 805 compliance.	4.4.2 and Attachment E
11-805-086	1	HTP-ZZ-02005, "Handling of Radioactive Material," will be revised to add reference to Callaway Plant Calculation HPCI 10-04, "National Fire Protection Association (NFPA) Standard 805 Airborne and Liquid Effluents Offsite Dose," and to add discussion to Section 6 to discuss considerations of surveys to verify dose levels and calculation limits are adhered to. Actions to be taken should limits be exceeded will be added.	4.4.2 and Attachment E
11-805-087	1	RTN-HC-01000, "Storage and Handling of Radwaste," will be revised to add reference to Callaway Plant Calculation HPCI 10-04, "National Fire Protection Association (NFPA) Standard 805 Airborne and Liquid Effluents Offsite Dose," and to add discussion to Section 5 to discuss considerations of fire, gaseous and liquid effluents impacts on NFPA 805 compliance	4.4.2 and Attachment E

**Table S-3 Implementation Items**

<b>Item</b>	<b>Unit</b>	<b>Description</b>	<b>LAR Section / Source</b>
11-805-088	1	Configuration control mechanisms for the Fire PRA and NSCA will be revised to ensure the basis for MSO inclusion/exclusion is maintained consistent with the current plant. The rationale for excluding generically identified MSOs from the Callaway Plant Fire PRA and Callaway Plant NSCA was documented in Callaway Plant Calculation 17671-002b, "Callaway NFPA 805 Fire PRA - MSO Expert Panel Report," and Callaway Plant Calculation KC-26, "Nuclear Safety Capability Assessment," respectively. Configuration control mechanisms will be reviewed to provide reasonable confidence that the exclusion basis remains valid.	4.2.1.4 and Attachment F
11-805-089	1	The Monitoring program described in procedure EDP-ZZ-01101, "Fire Protection Monitoring Program Procedure, will be implemented after the safety evaluation issuance as part of the fire protection program transition to NFPA 805. Ameren Missouri will implement a monitoring program in accordance with FAQ 10-0059 Rev. 5 during implementation.	4.6.2
11-805-090	1	In order to adequately reflect the calculated reliability of recovery actions in the Fire HRA, the Fire HRA will be updated once procedure updates, plant modifications, and recovery action training are complete.	4.2.1.3 and Attachment G
11-805-091	1	The missing ceiling tiles in the suspended ceiling in fire compartments C-5 and C-6 will be replaced in order to ensure proper operation of sprinkler system SKC34, which is credited in the Fire PRA, in accordance with NFPA 13-1976 Edition. Configuration control on the ceiling tiles will be ensured.	4.1.2 and Attachment A
11-805-092	1	An administrative control will be implemented to ensure that the breaker (PB0406) for DP AE02 is disabled open during at-power plant operation to address a potential MSO that may result in overfill of steam generators/overcooling of the RCS.	4.2.1.4 and Attachment F
11-805-093	1	The current Fire PRA does include the phase #1 version of MP 10-0038, and the AEPS, MP 10-0032. As the modification packages are completed, the FPRA will be updated if necessary to reflect the final configuration.	Attachment S

**Table S-3 Implementation Items**

<b>Item</b>	<b>Unit</b>	<b>Description</b>	<b>LAR Section / Source</b>
12-805-001	1	<p>All of the items labeled with footnote 1 in PRA RAI 1, Table 1, will be completed:</p> <p>F&amp;Os: 1-7, 1-14, 1-25, 1-3,1-13 and 1-15</p> <p>These commitments involve updating the fire PRA to be consistent with upgrade items that were implemented in the internal events PRA update (Revision 5) after the Callaway Plant NFPA-805 LAR was submitted.</p> <p>In addition, a self-assessment of the internal events PRA against the RG 1.200, Rev 2 clarifications and qualifications to determine if any gaps exist is in progress and will be completed, with any resolutions completed before transition to NFPA 805 occurs.</p>	Attachment U
12-805-002	1	<p>Technical details demonstrating the Control Room Abandonment models are used within the validated range of NUREG-1824 "Verification and Validation of Selected Fire Models for Nuclear Power Plant Applications," Final Report, April 2007, as well as any justification of models outside the range, will be documented in the next update to Callaway Calculation 17671-010b "Callaway NFPA 805 Fire PRA - Main Control Room Fire Analysis."</p>	Attachment J
12-805-003	1	<p>The fire PRA LERF model will be updated to be consistent with the IE-PRA LERF model phenomenology, split fractions, and probabilities during the next Fire PRA update.</p>	4.5.1 and Attachment W
12-805-004	1	<p>APA-ZZ-00741, "Control of Combustible Materials," will be revised to implement "No Storage" and "No Hotwork" controls for Fire Areas A-1, A-11, A-12, A-27, C-1, C-2, C-3, C-7, C-8, C-9, C-10, C-11, C-12, C-17, C-18, C-19, C-20, C-21, C-22, C-23, C-24, C-25, C-26, C-30, C-31, C-32, C-33, C-34, C-36, and C-37.</p>	Attachment V
12-805-005	1	<p>Upon completion of all Fire PRA credited implementation items in Transition Report Table S-2, verify the validity of the change-in-risk provided in Attachment W. This includes consideration of the following plant modifications: 05-3029, 07-0151 and 09-0025. If this verification determines that the risk metrics have changed such that the RG 1.205 acceptance guidelines are not met, the new Implementation Item 12-805-005 will require implementation of additional analytical efforts, and/or procedure changes, and/or plant modifications to assure the RG 1.205 risk acceptance criteria are met.</p>	Attachment W

**Table S-3 Implementation Items**

<b>Item</b>	<b>Unit</b>	<b>Description</b>	<b>LAR Section / Source</b>
13-805-001	1	Callaway will revise its Fire PRA analysis to utilize alternate analyses specifically by modifying the PRA model to provide detailed HRA of all actions required after Control Room evacuation. This evaluation will be accomplished using the EPRI HRA calculator and be conducted in accordance with the guidance in NUREG-1921 prior to use of the Fire PRA for evaluation of post-transition changes to the Fire Protection Program.	PRA RAI 36
13-805-002	1	Callaway will revise its Fire PRA analysis to utilize the Fractional Influence Factors (e.g., 0.0, 0.1, 0.3, 1.0, 3.0, 10, or 50) in FAQ 12-0064 and ensure that all evaluated locations have a total influence factor greater than 0.0 prior to use of the Fire PRA for post-transition changes.	PRA RAI 37
13-805-003	1	Callaway will revise the Fire PRA to utilize the total ignition frequency for Bus Duct fires (BIN 16.2) which are specified in Supplement 1 to NUREG/CR-6850 prior to use of the Fire PRA for evaluation of post-transition changes to the Fire Protection Program.	PRA RAI 38
13-805-004	1	Callaway will revise the Fire PRA to utilize the specific CPT treatment guidance provided in a Letter to Joe G. Gitter from Richard P. Correia dated June 14th, 2013 titled "Interim Technical Guidance on Fire Induced Circuit Failure Mode Likelihood Analysis" prior to use of the Fire PRA for evaluation of post-transition changes to the Fire Protection Program.	PRA RAI 39
13-805-005	1	Callaway will revise the Fire PRA to utilize the fire growth time to peak heat release rate for trash fires of 8 minutes specified in FAQ 08-0052 incorporated in Supplement 1 to NUREG/CR-6850 (EPRI 1011989) for the Main Control Room transient fires prior to use of the Fire PRA for evaluation of post-transition changes to the Fire Protection Program.	PRA RAI 40
13-805-006	1	Callaway will implement the uncertainty methodology used in response to PRA RAI 09-B to estimate the change in risk associated with post-transition changes to the Fire Protection Program with the understanding that the uncertainty methodology can be refined to utilize parametric data evaluations.	PRA RAI 41
13-805-007	1	Callaway will revise the Fire PRA to incorporate the Internal Events PRA Common Cause Failures (CCFs) such that both the current IE and Fire PRA are consistent regarding CCFs prior to using the Fire PRA to evaluate the change in risk associated with post-transition changes to the Fire Protection Program.	PRA RAI 42